Section of Epidemiology and State Medicine.

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The Incidence of Venereal Disease in Scotland.

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(ABSTRACT.) [1]

Dr. Dewar's paper was an endeavour—by means of a survey of all the results of work that had been published in connexion with the incidence of venereal disease in Scotland, especially as demonstrated by series of Wassermann tests—to attain a fairly reliable conception of the general incidence of syphilis and gonorrhœa among the population of Scotland. He explained that the work had arisen owing to a realization of the necessity of convincing members of Scottish local authorities that these diseases were by no means exceptional in at least the populous parts of the country. Dr. Dewar admitted that in any inferences that could be arrived at regarding the incidence of venereal disease in Scotland there must be a large element of conjecture, and that such incidence undoubtedly varied very much between the cities on the one hand and the sparsely populated areas, the islands and peninsulas of the north and west, on the other.

Dr. Dewar discussed at some length the incidence of illegitimacy in Scotland, which is high on the whole, and strikingly different as between one area and another, certain counties maintaining year by year a pre-eminence in this respect. He considered it as at least probable that the venereal disease incidence-rate varies from place to place in approximately inverse proportion to the illegitimate birth-rate. Admitting that there was particular difficulty in estimating the incidence of venereal disease in the rural and mountainous districts, he pointed out that in respect of 80 per cent. of the population of Scotland, who were congregated in the Forth and Clyde basins and in the immediately adjoining mining and manufacturing districts—i.e., four-fifths of the people being resident in one-eighth of the area—the incidence of venereal disease was not likely to vary greatly.

Passing to the statistical material at his disposal Dr. Dewar first dealt with the figures available in the Registrar-General's reports, pointing out that little reliability could be placed upon the number of deaths attributed to syphilis, since about 75 per cent. of these were of children under 1 year old. In other words, whilst congenital syphilis is certified as a cause of death with some candour, at least in infants, acquired syphilis is quite exceptionally given as a cause of death. He quoted statistics and estimates collected by Dr. Dittmar, of the Scottish Board of Health, in 1919; these figures, based upon the death returns, assuming that all cases of general paralysis and locomotor ataxia are definitely syphilitic and that other diseases such as aneurysm, hemiplegia under

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55 years of age, and "congenital debility" are attributable to syphilis in a fraction of all the cases which can be approximately measured. On this basis Dr. Dittmar concluded that in Scotland on an average about 4,200 persons, or 92 per 100,000 of the whole population, die of syphilis; this figure being equivalent to just under 6 per cent. of the total annual death-rate. It is significant that Dr. David Watson, Glasgow, who has had very wide experience of syphilis in Scotland, has expressed the opinion that Dr. Dittmar's estimates are too low. He formed the estimate in 1919 that in Scotland annually there were about 27,000 new cases of syphilis and 85,000 new cases of gonorrhœa. It is significant to compare this estimate with that given by Dr. Douglas White in his evidence before the Royal Commission on Venereal Diseases, who, also basing his estimate upon a consideration of all available statistics, came to the conclusion that in the United Kingdom there were annually about 114,000 fresh cases of syphilis and about 686,000 fresh cases of gonorrhœa. If the latter estimates are correct, then either Dr. Watson's figures are too high in respect of syphilis, or Scotland has a higher incidence of that disease than England. As regards gonorrhœa, the two estimates are in surprisingly close agreement.

Dr. Dewar thought that a more accurate estimate was to be attained by study of the numbers of deaths attributable to general paralysis and locomotor ataxia—both undoubtedly syphilitic in origin. Upon a review of all the figures available as regards the percentage of cases of syphilis that ultimately manifested one or other of these sequelæ, and especially of the exhaustive investigation of Mattauschek and Pilcz, who traced the course of syphilitic illness in over 4,000 officers of the Austrian army, it seems fair to conclude that, taking both sexes and both end forms of the disease, from 2 to 3 per cent. of all the persons who acquire syphilis eventually die of general paralysis or tabes dorsalis. Applying that factor to the average number of deaths annually ascribed in Scotland to these maladies, it appears that at a period about twelve or fifteen years previously, from 8,000 to 13,000 persons annually acquired syphilis in Scotland. If 10,000 is taken as a provisional figure, it is not likely that it will be far from the truth.

The most reliable basis for an estimate of the incidence of syphilis in Scotland is undoubtedly to be derived from the records of the application of the Wassermann test to various groups in the community. Dr. Dewar quoted the statistical results of a large number of such investigations in Scotland. He quoted Dr. W. M. Elliott, who examined the blood of 130 children admitted to measles and whooping-cough wards in Glasgow: out of 126 of these who presented no indications of syphilis, ten gave a positive reaction; Dr. Ivy Mackenzie, who found that of 786 blood samples from insane patients, 347 gave a positive reaction; Dr. Thomson, Medical Officer of Barnhill Poorhouse, who found that of 81,244 patients consecutively admitted, 1,955 suffered from venereal disease of acute stage or type; Dr. Kennedy, Maternity Hospital, Glasgow, who found that of 1,881 consecutive samples of maternal blood examined, 9·03 per cent. were positive; and that of 1,350 samples of blood taken from infants, 4·14 per cent. were positive; Dr. J. N. Cruickshank, Glasgow, who, among 1,900 unselected samples of maternal blood, found a positive Wassermann reaction in a little over 9 per cent.: Dr. M'Ilroy and Dr. H. F. Watson, who took samples from 100 unselected out-patients at the gynæcological clinic of the Royal Infirmary, Glasgow, finding 43 per cent. positive; Dr. Kate Fraser and Dr. H. F. Watson, who found 46 per cent. of positive Wassermann reactions out of 204 cases of abnormal children attending special schools in Glasgow;

Dr. Carl Browning, who mentions 331 unselected cases of children attending Glasgow dispensaries, of whom 14 per cent. presented evidence of syphilis ; Dr. John Watson, who examined the blood serum of 619 patients at the Tuberculosis Hospital, Robroyston, Glasgow, finding 6·6 per cent. positive ; Sir Norman Walker, who found that of sixty-five consecutive cases attending his lupus clinic at the Edinburgh Royal Infirmary, five were positive ; Dr. E. M. Dunlop, who examined the blood of seventy-seven cases of scarlet fever admitted to the County Hospital, Motherwell, none of whom were found positive ; Dr. W. T. Munro, who among 100 patients admitted to the Glenlomond Sanatorium, Fifeshire, found twenty positive ; Dr. W. J. Tulloch, Dundee, who found that of 109 specimens sent from the Infant Hospital, Dundee, six were positive and two others doubtfully positive ; and other authorities who had worked on similar lines and reached comparable figures.

Dr. Dewar mentioned that he had had a series of blood specimens taken from the operating table of a provincial hospital in Scotland ; of the first ninety-eight, two were positive ; while a second series now being examined shows four positive results in forty-three cases.

Dr. Dewar considered the evidence that was afforded by the number of attendances at the various venereal disease clinics in Scotland. These clinics number thirty-eight in all, of which thirty-three have outpatient departments. During the year ending May, 1922, 11,154 new cases had attended these clinics. He was not inclined to set much store by this figure, since the attendance at the various clinics seems to be more determined by the energy of the personnel than by any other local factor. Moreover, about one-half of the cases that attend are cases of syphilis. It is quite certain that the cases of gonorrhœa far exceed those of syphilis in actual number.

The inferences to be drawn from the report of the Ministry of National Service were also considered.

The question of the incidence of syphilis and gonorrhœa among troops and naval ratings in Scottish areas was considered somewhat fully, especially in its bearing upon the question of the general incidence of these diseases among the civil population.

The figures applicable to Scotland quoted in the report of the Royal Commission on Venereal Diseases were referred to, especially those regarding the incidence of the diseases among prisoners in Scotland.

The tentative estimates reached by all these diverse paths were reviewed in the light of the opinions held by those who had been associated with the treatment of venereal disease over considerable periods of time.

The author then dealt with the relative incidence of syphilis in the two sexes ; with the comparative incidence of syphilis and gonorrhœa ; and with the relation of the number of new cases occurring in a community in any one year to the total number of cases existing in the community at a given time.

CONCLUSIONS.

(1) It will be accepted by all that syphilis in Scotland has its maximum prevalence in Glasgow and the other large centres and that the incidence diminishes with the density of population until in the remote highland and insular parts it falls to a very low, if perhaps never quite trivial, rate.

(2) It seems to be the case that in the cities and large towns from 3 to 5 per cent. of the children are born with congenital syphilis. If the figures ascertained by Elliott perhaps point to too high an incidence, it seems probable that the estimate of Cruickshank is too low. It is significant that Dr. Leonard Findlay with his great experience of juvenile syphilis in Glasgow states—and

seems to accept the reproach—that "until the present time, with the exception of Epstein's Prague statistics, the highest figures have been obtained in Glasgow and have earned for it the unenviable reputation of being the most syphilized city in Britain."

(3) As regards comparative incidence between Scotland and the remainder of Britain, there is good reason for accepting the dictum of the Royal Commission that "the general incidence of syphilis does not differ greatly in the two portions of the United Kingdom."

(4) On a survey of all the statistics and estimates, it may be assumed that in Scotland, with a population of about four and three-quarter millions, 12,000 new cases of syphilis, on the very lowest computation, are annually acquired. Two-thirds of these are in men. Other observers make the total figure much higher, Dr. D. Watson making it fully twice as high.

(5) Each year, in Scotland, the new infections of gonorrhœa are from 35,000 to 70,000.

(6) At any given time, at the lowest estimate, 2 to 3 per cent. of the total population are infected by one or other of the venereal diseases. In the populous areas, the minimum figure is 5 per cent. for men and 2 per cent. for women.

(7) The tendency is certainly, if not in any marked degree, towards reduction of incidence of both diseases. This was to be anticipated on epidemiological grounds. It is well known that such diseases after being endemic for many years attain an approximate equilibrium. That being so, the work of the treatment centres must certainly have had the effect of temporarily, if not permanently, checking their prevalence.

DISCUSSION.

Dr. M. GREENWOOD said that Dr. Dewar's paper contained a valuable collection of statistical data which merited careful study. No department of medical statistics was more beset with pitfalls and it was necessary to exercise the greatest caution in drawing conclusions. From an instantaneous photograph—as it were—of the condition of a sample of the population, it was hard—in fact it was impossible—to deduce the information they would all like to have, viz., an answer to the question—What was the probability that a man (or woman) would contract syphilis before dying? Even the significance of the instantaneous photographs was hard to assess, as the variations in Dr. Dewar's series proved. These difficulties in no way detracted from the value of the impartially collected data which Dr. Dewar had brought to their notice.

Dr. R. DUDFIELD said that, bearing in mind the two-fold objects of the Section, he would deal with the prevention of venereal disease. As medical officer of health of a metropolitan borough having a population much greater than many county boroughs, he was debarred from taking any share in the treatment of venereal disease, the County Council being the authority for the metropolis. He had therefore no knowledge of the prevalence of the disease in his area, nor of the proportion of infected persons who ceased attendance at the clinics before completion of treatment. Although he understood that the records kept at such clinics made it possible for any given patient to be counted for statistical purposes two or more times, he regretted that so little use was made of the data available. Dr. Dewar's estimate of 12,000 new attacks per annum, with a ratio of three cases of gonorrhœa to one of syphilis, indicated a prevalence far in excess of those of any of the infectious diseases at present subject to measures of prevention. He (Dr. Dudfield) was satisfied that effective treatment ought to be established. While he feared that public opinion was not ripe for notification of every case of venereal disease, he thought that efforts should be made to secure "conditional" notification such as was in force in Western Australia and Canada. There could be no doubt that the spread of the disease was largely due to infected persons giving up treatment before cure.